WTC Conference, MS 8610
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ATTN: Co-Chairs S. Shyam Sunder and William L. Grosshandler

Gentlemen,

At the onset I want to go on record supporting the fine work of NIST and all of their employed associates. I commend the effort that you all have done and are continuing to do.

It is my understanding that NIST has made the assumption, that the existing fireproofing became dislodged primarily due to the flying debris generated by the aircraft impact. In my opinion, over reliance on this assumption is not only invalid, but is not supported by the known facts.

My presentation argues that the condition of the existing sprayed fire resistive materials, both the initial installation and the continued maintenance, must be investigated for the role they may have played in the collapse, a role perhaps greater than that of the plane's impact.

What we know.

We know:

1. That the determination of thermal restraint was dubious at best.
2. That the ½" thickness as measured and reported by FEMA was grossly underprotected.
3. That the test records have disappeared.
4. That apparently no maintenance records exist to speak of.
5. Steel substrate has been prime painted.

There also is ample evidence that the means and methods of fireproofing installations of today are not that different from 35 years ago. Therefore the pressures that exist today probably existed back then as well. With a reasonable degree of confidence we know:

6. That there were cost pressures.
7. That there were schedule pressures.
8. Environmental pressures.
9. That there were human fallacies.

None of these 9 conditions bode well for a compliant installation of fire resistive materials.

Difficulties with the impact theory.

I am uncomfortable with over reliance on the impact theory based on several issues:

1. To rely on the flying debris argument, we have to assume that the original application was at least reasonably compliant, and that proper maintenance had been exercised over the years.
    a. At this point in time we simply don't know, and although there is not much to suggest compliance or maintenance, the truth is that we probably will never know.
    b. There is an abundant support (photographs and field measurements) to suggest that it was not a compliant installation from the beginning.
    c. I understand that there are apparently no test or maintenance records available, further weakening a well maintained and compliant installation of fire resistive materials.

If we accept the flying debris theory as the primary cause for dislodging the existing fireproofing, we have to assume that it was compliantly installed in the first place. If the existing fire resistive material was not installed correctly or compliantly then the question becomes how much of a role did the non-compliant installation play in the collapse?

2. Secondly, if we are to assume that the impact force of the plane's was the primary cause of the dislodged fireproofing, then we would have to assume that it was sufficient in magnitude, totally geographic over the footprint of the building, multidirectional, and abrasive (sandblast like) enough to remove the critical spray applied fireproofing, thereby allowing failure. I have removed supposedly bad fireproofing with air and jackhammers. It is quite a job. At this point there is nothing to suggest that the force of the plane was that equally distributed through out the footprint of the building, with sufficient 200 lbs/sf of perpendicular force in all directions, to remove the fireproofing.

3. Finally the collapse of buildings, essentially straight down, suggests that the failure was global across the footprint of the floor and not radiating away from a single impact point. Maybe it was poorly sprayed, maybe it was the prime paint, maybe it was something else, but I doubt that the total floor failure radiated from a single point.

I do not think the documentation supports all three assumptions.

The argument

My argument is quite simple

1. The investigation data of the collapse does not support the plane's impact as the sole cause, or even the primary cause in my opinion, for the failure of the fireproofing to perform.

documentation, strongly suggests that the condition of the fireproofing, pre-impact, must be studied as a cause of failure from an initial application perspective and a maintenance perspective.

3. The condition of the existing spray applied fire resistive material, and the causes that allow such conditions to exist, must be studied and remedied, as a pertinent part of this investigation.

The Recommendations.

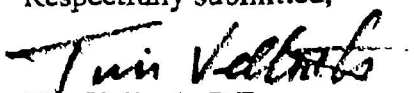
My recommendations are:

1. Establish the role the conditions of the existing fireproofing had in the collapse.
2. Identify the "means and methods" that allowed a poor installation to exist,
3. Determine the extent of the problem in current installations and in other buildings.
4. Develop criteria to prevent future misapplication.
5. Create a link of responsibility for the verification of rating achievement and maintenance.

Opportunity

Most of us have seen, either live or on TV the images of the collapses. Out of the dust, dirt, and tragedy some of us see an opportunity. An opportunity not to criticize others, but an opportunity to set a course of expertise, a course of education, a course of deliberation, a course of responsibility, and if necessary a course of enforcement for compliant passive fire protection. Ultimately the goal of all of us must be safer building for the occupants and the general public. That is the opportunity that lies before us, and it is up to use to accept that challenge.

Respectfully submitted,



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